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BEST AVAILABLE COPY**REMARKS**

Claims 1 and 3-18 are all of the claims presently pending in the application. Claims 1, 3, 5, 6, 11, 16 and 17 have been amended to more particularly define the invention.

Entry of this Amendment is believed proper since no new issues are being presented to the Examiner which would require further consideration and/or search.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1 and 3-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hedberg et al. (WO 99/53625A1) (provided by Applicant in the April 20, 2004 Information Disclosure Statement) (hereinafter "Hedberg") in view of Berman et al. (United States Patent No. 6,091,934) (hereinafter "Berman").

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention (e.g., as defined by claim 1) is directed to a base-station amplifier device for use in amplifying at least one channel to be transmitted from a base station. The base-station amplifier device includes at least one amplitude limiting means, a high frequency modulating means, an adding means for adding outputs from the high frequency modulating means, and an amplitude controlling means. The amplitude controlling means instructs the amplitude limiting means not to perform an amplitude limitation when the number of the at least one channel is small. At a time of high traffic (when the number of channels is increased), the amplitude controlling means outputs an amplitude controlling characteristic, and instructs said amplitude limiting means to perform the amplitude limitation based on the characteristic of the amplifying means.

Conventionally, it is necessary to linearly amplify increased peak powers in a base station by using an amplifier. However, if the amplifier in the base station is less than 200 watts, it is impossible to perform a linear amplification so that a distortion is generated with

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deterioration of radio characteristics. In the CDMA mode, since transmitting power is increased by increasing the number of channels to be multiplexed, peak power increases as traffic increases. Therefore, there is a tendency to largely vary a design of the amplifier in response to the magnitude of the peak signal to be input into the amplifier.

The claimed invention of exemplary claim 1, on the other hand, provides a base-station amplifier device having at least one amplitude limiting means and an amplitude controlling means. At a time of high traffic (when the number of channels is increased), the amplitude controlling means outputs an amplitude controlling characteristic, and instructs said amplitude limiting means to perform the amplitude limitation based on the characteristic of the amplifying means (see page 3, lines 9-17). This combination of features provides superior effects. That is, it is possible to amplify high peak signals during low traffic (when the number of channels is small) and it is possible to achieve a lower power consumption (see page 3, lines 5-9 and page 10, lines 1-3).

II. THE PRIOR ART REFERENCES

The Examiner alleges that Berman would have been combined with Hedberg to form the claimed invention of claims 1 and 3-18. Applicants submit, however, that even if combined, the alleged combination of references would not teach or suggest each and every element of the claimed invention.

That is, neither Hedberg nor Berman, nor any combination thereof, teaches or suggests a base-station amplifier device "*wherein at a time of high traffic, said amplitude controlling means outputs an amplitude controlling characteristic and instructs said amplitude limiting means to perform the amplitude limitation based on the characteristic of said amplifying means*" as recited in claim 1 and similarly recited in claims 5, 6 and 16.

The Examiner attempts to rely on Figure 2; page 7, line 21; page 9, lines 1-17 and page 10 lines 6-20 of Hedberg to support his allegations.

Nowhere, however, in this figure nor these passages (nor anywhere else for that matter) does Hedberg teach or suggest a base-station amplifier device wherein at a time of high traffic, the amplitude controlling means outputs an amplitude controlling characteristic, and instructs said amplitude limiting means to perform the amplitude limitation based on the

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characteristic of the amplifying means. In fact, the Examiner does not even allege that Hedberg teaches this feature.

The object of Berman is to dynamically allocate power to a satellite's high power amplifiers to maintain an amplifier efficiency and meet peak traffic demands and reduce power consumption during low traffic periods (see column 1, last paragraph). In particular, as shown in Figure 3, the gain of the amplifier is maintained while its operating points are changed to track variations in the channel traffic (see column 4, lines 19-22).

Indeed, Hedberg is merely directed to providing the ability to effectively reduce the peak-to-average power ratio for a CDMA signal (see Hedberg at page 4, lines 16-19). Hedberg teaches a pulse shaping filter (120) (see Hedberg at Figure 2), which corresponds to the amplitude controlling circuits of the claimed invention.

In contrast, the present invention provides a base-station amplifier device which has lower deterioration in radio characteristic due to variation of peak signal during high traffic and high transmitting power (see page 3, second paragraph of the Application).

To achieve such advantages the present invention includes that "at the time of a high traffic, amplitude controlling means outputs an amplitude controlling characteristic and instructs amplitude limiting means to perform the amplitude limitation based on the characteristic of amplifying means".

When the number of channels is small, transmitting power becomes small so that the amplitude controlling means (amplitude controlling circuits 106) instructs the amplitude limiting means (amplitude limiting circuits 102) not to perform an amplitude limitation of peak signal. When the number of channels is increased, amplitude controlling means outputs an amplitude controlling characteristic and instructs the amplitude limiting means to perform the amplitude limitation based on the characteristic of the amplifying means (see page 7, second paragraph).

Therefore, Berman and Hedberg clearly differ from the present invention, so we do not believe that the present invention is easily achieved by combining Berman and Hedberg.

Further, in the rejection of claim 3, the Examiner alleges that Berman teaches a base station amplifier device wherein the amplitude control means controls the amplitude limiting means based on characteristics of the amplifying means and an output from the detecting

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means when the output from the detecting means exceeds a threshold value based on characteristics of the amplifying means. The Examiner attempts to rely on column 4, line 43 through column 5, line 14 of Berman to support his allegations. The Examiner, however, is clearly incorrect.

That is, nowhere in this passage (nor anywhere else for that matter) does Berman teach or suggest a base-station amplifier device wherein at a time of high traffic, the amplitude controlling means outputs an amplitude controlling characteristic, and instructs said amplitude limiting means to perform the amplitude limitation based on the characteristic of the amplifying means. Indeed, the object of Berman is to merely dynamically allocate power to a satellite's high power amplifiers to maintain amplifier efficiency and meet peak traffic demands and reduce power consumption during low traffic periods (see Berman at column 1, lines 62-67). In particular, as shown in Figure 3 of Berman, the gain of the amplifier is maintained while its operation points are changed to track variations in the channel traffic (see Berman at column 4, lines 19-22).

In contrast, certain aspects of the claimed invention provide a base-station amplifier device that has lower deterioration in the radio characteristic caused due to variation of the peak signal during high traffic and high transmitting power (see Application at page 3, lines 5-8). The claimed invention teaches that at a time of high traffic, the amplitude controlling means to perform the amplitude limitation based on the characteristic of the amplifying means, which allows the amplifier device to have a lower deterioration in the radio characteristic.

When the number of channels is small, transmitting power becomes small so that the amplitude controlling means (e.g., amplitude controlling circuits 106) instructs the amplitude limiting means (amplitude limiting circuits 102) not to perform an amplitude limitation of peak signal. When the number of channels is increased (e.g., at a time of high traffic), the amplitude controlling means outputs an amplitude controlling characteristic and instructs the amplitude limiting means to perform the amplitude limitation based on the characteristic of the amplifying means (see Application at page 7, lines 21-30).

Therefore, Applicants respectfully submit that these references, even if combined, would not teach or suggest each and every element of the claimed invention. Therefore, the

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means when the output from the detecting means exceeds a threshold value based on characteristics of the amplifying means. The Examiner attempts to rely on column 4, line 43 through column 5, line 14 of Berman to support his allegations. The Examiner, however, is clearly incorrect.

That is, nowhere in this passage (nor anywhere else for that matter) does Berman teach or suggest a base-station amplifier device wherein at a time of high traffic, the amplitude controlling means outputs an amplitude controlling characteristic, and instructs said amplitude limiting means to perform the amplitude limitation based on the characteristic of the amplifying means. Indeed, the object of Berman is to merely dynamically allocate power to a satellite's high power amplifiers to maintain amplifier efficiency and meet peak traffic demands and reduce power consumption during low traffic periods (see Berman at column 1, lines 62-67). In particular, as shown in Figure 3 of Berman, the gain of the amplifier is maintained while its operation points are changed to track variations in the channel traffic (see Berman at column 4, lines 19-22).

In contrast, certain aspects of the claimed invention provide a base-station amplifier device that has lower deterioration in the radio characteristic caused due to variation of the peak signal during high traffic and high transmitting power (see Application at page 3, lines 5-8). The claimed invention teaches that at a time of high traffic, the amplitude controlling means to perform the amplitude limitation based on the characteristic of the amplifying means, which allows the amplifier device to have a lower deterioration in the radio characteristic.

When the number of channels is small, transmitting power becomes small so that the amplitude controlling means (e.g., amplitude controlling circuits 106) instructs the amplitude limiting means (amplitude limiting circuits 102) not to perform an amplitude limitation of peak signal. When the number of channels is increased (e.g., at a time of high traffic), the amplitude controlling means outputs an amplitude controlling characteristic and instructs the amplitude limiting means to perform the amplitude limitation based on the characteristic of the amplifying means (see Application at page 7, lines 21-30).

Therefore, Applicants respectfully submit that these references, even if combined, would not teach or suggest each and every element of the claimed invention. Therefore, the

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Examiner is respectfully requested to withdraw this rejection.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicants submit that claims 1 and 3-18, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.


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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: March 14, 2005



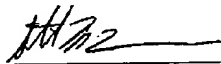
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CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that I am filing this Amendment by facsimile with the United States Patent and Trademark Office to Examiner George Eng, Group Art Unit 2643 at fax number (703) 872-9306 this 14th day of March, 2005.



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